Amendments to the Claims:

1. (Currently Amended) A baseband processing method based on smart antenna and interference cancellation for a communication system including one or more antenna units linked to one or more corresponding radio frequency transceivers which are linked to a bandbased processor, comprising the steps of :

A. obtaining sampled-data output signals from said antenna units and said corresponding radio frequency transceivers, estimating user channels based on said sampled-data output signals using a predetermined user training sequence, and obtaining user responses from said estimated user channels;

B. detecting de-spread results which are useful symbolic level signals from said sampled-data output signals ~~using smart antenna~~ by beam ~~formation~~ forming every muiltipath within a searching window length based upon said estimated user channels;

C. reconstructing the useful symbolic level signals, adding a scramble code, and then obtaining a chip level reconstructed signal;

D. subtracting the reconstructed signals from said sampled-data output signals; and

E. repeating steps B to D until recovering all user signals.

2. (Currently Amended) The method according to claim 1, wherein ~~a channel estimation module estimates the user channels in Step A and~~ further said user responses are stored as a matrix, which is correlated to an individual user's training sequence and is calculated and stored beforehand.

3. (Currently Amended) The method according to claim 1, wherein step B ~~further~~ comprises:

estimating a power response for all users on all channels ~~using a power estimation module~~, calculating the main path and multipath power distribution for all users within a searching window;

~~sending the calculated power distribution to a signal generator to generate a signal;~~ and

generating the de-spread results by: calculating each user maximum peak value power position based on the calculated power distribution, storing the calculated peak value power position in a power point and obtaining de-spread results of all signals at the power point with a smart antenna algorithm.

4. (Original) The method according to claim 3, further comprising sending an adjustment parameter for synchronization to a transmitting module associated with a user its most powerful path is not at the same point of other users and which is not synchronized with a base station while calculating each user's maximum peak value power position.

5. (Currently Amended) The method according to claim 3, wherein step B further comprises:

~~sending the de-spread result to a signal/noise ratio estimation module and~~ estimating a signal/noise ratio for all users based on the de-spread result,

repeating steps C, D, and E for users identified as having a low signal/noise ratio; and

outputting a signal result directly for users identified as having a high signal/noise ratio.

6. (Currently Amended) The method according to claim 5, wherein the step of estimating a user signal/noise ratio comprises:

calculating a user power;

determining whether the calculated user power is greater than a selected ~~field value~~ threshold so as to determine whether the calculated user power is an effective power;

calculating the ~~square difference~~ variance for all signals having an effective power at their corresponding constellation map point; and

identifying those users having a low signal/noise ratio when the ~~square difference~~ variance is greater than a preset value, and identifying those users having a high signal/noise ratio when ~~their square difference~~ the variance is less than said preset value.

7. (Currently Amended) The method according to claim 1, wherein step C comprises reconstructing the useful symbolic level signals ~~using a signal reconstructing module~~ and calculating components of all users signal and multipaths on each antenna unit.

8. (Original) The method according to claim 1, wherein step D is executed using an interference cancellation module.

9. (Currently Amended) The method according to claim 1, wherein step E comprises repeating ~~is executed using a decision module,~~ until a number of interference cancellation loops reaches a preset number, which preset number is less or equal to length of a search window, at which time ~~step E further comprises stopping~~ interference cancellation is stopped and ~~outputting~~ the recovered signals are output.

10. (Currently Amended) The method according to claim 1, wherein step E ~~is executed in a decision module~~ comprises, until the signal/noise ratio of all signals is greater than a predetermined ~~field~~

~~value~~ threshold, at which time ~~Step E further comprises~~ stopping interference cancellation and outputting the recovered signals.

11. (Original) The method according to claim 1, wherein step E comprises repeating steps B to D for at most a number of times equal to the length of searching window.

12. (New) The method according to claim 1, wherein a channel estimation module estimates the user channels in step A.

13. (New) The method according to claim 3, wherein a power estimation module estimates the power response, the main path and multipath power distribution,

a signal generator that receiving the calculated power distribution generates the useful symbolic level signals.

14. (New) The method according to claim 5, wherein a signal/noise ratio estimation module that receiving the de-spread result estimates the signal/noise ratio.

15. (New) The method according to claim 1, wherein a signal reconstructing module reconstructs the reconstructed signals .

16. (New) The method according to claim 1, wherein step E is executed by a decision module.

17. (New) A baseband processor based on smart antenna and interference cancellation for a communication system including one or more antenna units linked to one or more corresponding radio frequency transceivers are linked to the bandbased processor, the baseband processor comprises,

a channel estimation module each estimating user channels for sampled –data output signals from the radio frequency transceivers; and

a smart antenna interference cancellation module for receiving user responses from each channel estimation module and the sampled–data output signals from each radio frequency transceiver, repeating the follows until recovering all user signals:

detecting de-spread results which are useful symbolic level signals from said sampled-data output

signals by beam forming every muiltpath within a searching window length based upon said estimated user channels;

reconstructing the useful symbolic level signals, adding a scramble code, and then obtaining a chip level reconstructed signal;

subtracting the reconstructed signals from said sampled-data output signals.

18. (New) The baseband processor according to claim 17, wherein the smart antenna interference cancellation module comprises,

a power estimation module, receiving user responses from the channel estimation module, estimating a power response for all users on all channels, calculating the main path and multipath power distribution for all users within a searching window;

a signal generator, receiving the calculated power distribution from the power estimation module, the user responses from the channel estimation module, interference cancellation results and the sampled-data output signals, calculating each user maximum peak value power position, storing the calculated peak value power position in a power point and obtaining de-spread results of all signals at the power point with a smart antenna algorithm;

a signal reconstructing module, reconstructing de-spread results from the signal generator and calculating components of all users signal and multipaths on each antenna unit to obtain a chip level reconstructed signal;

an interference cancellation module, receiving the sampled-data output signals and the reconstructed signals from the signal reconstructing module, subtracting the reconstructed signals from the sampled-data output signals to obtain the interference cancellation results sending to the signal generator; and

a decision module, determining whether a number of interference cancellation loops reaches a preset number, which preset number is less or equal to length of a search window; if so, instructing the signal generator to stop interference cancellation and output recovered signals.

19. (New) The baseband processor according to claim 18, the smart antenna interference cancellation module further comprises,

a signal/noise ratio estimation module, estimating a signal/noise for the de-spread results from the signal generator, outputting recovered signals directly for users identified as having a high signal/noise ratio; instructing the signal generator to continue interference cancellation for users identified as having a low signal/noise ratio.

20. (New) The baseband processor according to claim 18, the power estimation module further sending an adjustment parameter for synchronization to a transmitting module associated with a user its most powerful path is not at the same point of other users and which is not synchronized with a base station while calculating each user's maximum peak value power position.